MAY 8 - 1924

Vol. XLIV MAY, 1924 No. 9

PERIODICAL ROOM
GENERAL LIBRARY
UNIV. OF MICH.

EDUCATION

A MONTHLY MAGAZINE

DEVOTED TO THE SCIENCE, ART, PHILOSOPHY AND LITERATURE OF EDUCATION

FRANK HERBERT PALMER, A. M., EDITOR

CONTENTS

	PAGE
The Consolidation of Rural Schools. *Francis Lewis Cardozo.*	521
The Lane (Poem). *Minnie E. Hays.*	533
Patriotism and History. *F. F. Spaulding.*	534
Teach Me the Joy (Poem). *Grace Gordon.*	545
Some Educational Values in Laboratory Work. *W. G. Bowers.*	546
The Teacher-in-Training and Society. *Norman Fenton.*	556
Making Oral English Function. *Emily V. Truman.*	562
The Measurement Movement and the Man in the Street. *Charles G. Reigner.*	571
The Problem Method. *Bergoth Sand.*	576
American Notes-Editorial.	579
Book Reviews.	582

BOSTON

Published by THE PALMER COMPANY, 120 Boylston Street

LONDON E. C.: WM. DAWSON & SONS, Ltd., CANNON HOUSE, BREAMS BUILDINGS

Price 40 Cents $4.00 a Year

Two New Books on Various Phases of Education

TWENTY-FIVE YEARS OF AMERICAN EDUCATION

Edited by I. L. KANDEL

This is a symposium of contributions written by seventeen former students of Dr. Paul Monroe, of Teachers College, to show their appreciation of all he has contributed toward raising the standards of scholarship and research in the study of education. The twenty-five years of Dr. Monroe's fruitful activity as scholar and administrator coincide almost exactly with the completion of the first quarter of the present century which has witnessed the development of a science of education and in which a foundation has been laid for rapid progress in education that is to come. Each author has developed his own subject in his own way, yet a number of common principles run through the volume.

Price $2.25

CHANGING CONCEPTIONS IN JEWISH EDUCATION

By EMANUEL GAMORAN

Two books in one: JEWISH EDUCATION IN RUSSIA AND POLAND. Provides an historical and descriptive account of Jewish life, education, and culture in the countries which furnish us the great majority of our present Jewish population.

PRINCIPLES OF THE JEWISH CURRICULUM IN AMERICA. Discusses the problems that confront Jewish education today, enunciates the educational principles that govern their solution, and indicates the types of curriculum that should result.

Price $2.00

THE MACMILLAN COMPANY

New York Boston Atlanta Dallas Chicago San Francisco

EDUCATION

Devoted to the Science, Art, Philosophy and Literature of Education

VOL. XLIV. MAY, 1924 No. 9

The Consolidation of Rural Schools

Involving the Transportation of Children at Public Expense.

FRANCIS LEWIS CARDOZO,

WASHINGTON PUBLIC SCHOOL SYSTEM.

THE consolidation of rural schools is the most distinctive constructive effort that has taken place in this branch of public school management in modern times. The combining of several schools, educationally and otherwise ill-conditioned, in districts more or less contiguous, into a large, centrally-located, graded school, hygienically constructed, with modern comforts and with facilities adequate not only for regular but for collateral lines of work, albeit involving in some instances, the transportation of children at public expense, has afforded advantages to child, to parent and to an increasingly large community that are inestimable. A total appropriation in 1922 in 43 of the 48 states of the Union of $15,675,922 for consolidation alone, and in 12 of these states of $14,424,844 for transportation also, indicates the size of the movement and the public attitude, as

* See Bulletin No. 54, 1923, Bureau of Education, Department of the Interior, "Record of Current Educational Publications," comprising publications received by the Bureau of Education to October 15, 1923: Cardozo, Francis L. The junior high school, its origin and trend, a study. Education, 43:589-603, June, 1923.

reflected by state legislatures, toward this type of school. It may or may not be a mere expression of opinion that this movement, by and large, suggested the plan of near-consolidation as observed in the policy of grouping schools in some cities where such schools are too large to be abandoned or too costly to be supplanted by a still larger building and yet where proved experience teaches the educational as well as economic advantages of centralization, that is, of placing several schools under one directing head and influence, apparently the only feasible method of consolidation, such as it is, at such urban centers, but, unhappily, a striking and living illustration of the unwisdom of the small-school-construction policy of the past."[1]

The student of education cannot lightly regard a movement so serious and so general as that under discussion. The policy among the commonwealths of this country, and among foreign countries as well, of appropriating millions of dollars to bring about centralization of schools is too long and too universally established to easily convince the thinking mind of its unsoundness.

When first begun, some parents looked on timidly, others with awakening and increasing interest; all, listening and learning, were being educated into a full appreciation of the fact that, in movements of this sort, as well as those that have come later, conscientiousness, high intelligence and balanced judgment are not the sole possession of persons outside of educational institutions—that statesmanship may be found even among school officials. However, even where the one or more government-owned 'busses, transporting their children miles away to school, relieved little ones of the danger of exposure in the tramp through snow and bitter cold to the nearer building, parents and citizens generally did not become it strong advocates until subsequent events caused them to realize its full effect in the larger and deeper life and growth of

1 Report of the Schoolhouse Commission upon a General Plan for the Consolidation of Public Schools in the District of Columbia, Senate Document No. 338, 2-27-1908.

their children and of themselves. And then these folks did indeed line up as a tower of strength to the movement! The open-minded, progressive, co-operative citizen is of more value even in rural sections than the one "steeped in the narrow traditions of local pride," and provincialism once gone is gone forever.

Such became the invariable result, and school patrons trying consolidation, in some cases rather unwillingly, soon became enthusiastic in its praises. Not one abandonment of a completely unionized school, a name sometimes employed, has ever been reported,—due to the superior advantages over the old conditions that may be summarized as follows:

A much larger percentage of enumerated pupils;
No tardiness among transported pupils;
Irregular attendance reduced;
Pupils better classified and graded ,and therefore better taught;
No wet feet nor clothing;
No quarreling nor improper language on the way to and from school, pupils being under the care of some responsible person from the time they leave home until their return;
Advantage of better school buildings and better schoolrooms secured,—better heated, better ventilated, and better supplied with apparatus, etc.;
Advantage to pupils of that interest, enthusiasm and confidence which large classes always bring;
No objection on the part of city teachers, under such conditions, to transfer to rural schools;
More thorough and complete supervision insured;
Frequently more economical;
Invariably results in an increased number of children in the upper grades;
Leaves children more time at home mornings and evenings; and,
Proves a check on emigration to the city.

The consolidated school long since has become as successful in the north as in the south, in the east as in the west. In some sections the chief obstacle at first lay in the fact that several large-sized ungraded schools already existed. It appeared to be the hope of principals and patrons thereof that these communities would ultimately grow sufficiently in population to warrant the construction of large buildings to supplant ungraded schools. Unhappily for the childrens' educational interests, in some of these instances, hope became deferred, frequently vain. Let it be noted that the policy of consolidation quickly became universal.

In a genuine democracy everything waits on education, for no real or lasting improvement in any line of life is possible except through the better education of all the people. That section, therefore, is fortunate whose school administrators strong-handedly and strong-mindedly, if need be, put into application definite school policies, embracing continued improvement in the means of public school education for country as for city. Futhermore, it may be stated that the consolidated school, affording as has been shown, improved educational opportunities for the child and extending community-meeting opportunities for the adult, is the best type of democratic institution that a wise government can enable country folk to see. The fostering care of government must be made very obvious to farmer and to laborer, else they swell the ranks of the discontented and complaining. And experience teaches that in a government of this character, those who form the bone and sinew of the land should be kept happy and contented, if reasonable means can accomplish it. That a demand for good schools is but fair and just has long become the settled belief of this people.

"Ill fares the land, to hastening ills a prey,
Where wealth accumulates and men decay.
Princes and lords may flourish, or may fade;
A breath can make them as a breath hath made;
But a bold peasantry, their country's pride,
When once destroyed, can never be supplied."

The patriotic citizen, therefore, be he in city or in country, in school or out, will counsel urgently, without regard to self, the things that make for improved education, the very foundation of national stability. He will be tested and measured by the consistency and largeness of his support. The consolidated school is not only urgent but vital.

Of such fiber must the school administrators of Massachusetts have been built, who, after experimenting at several points in that state with the plan of consolidation and transportation, became convinced of its feasibility and efficacy, and accordingly presented a petition for its adoption to the legislature of that state. So well did they succeeed with that body that in 1869 money was not only appropriated for the consolidation of several country schools, but for the transportation as well of the most distant children therein to a new central school building. The movement was on. It is noteworthy that Quincy, of Colonel Parker fame, became the pioneer city in this movement, and from here the first children were carried at public expense by legislative enactment.

Massachusetts, historical leader in education, had already launched "the vacation school" in a very practical way earlier in the same year. It was now to become the proving-ground for the equally new plan of "the consolidated school." Needless to state the experiment was watched with the keenest interest by educators throughout the country. Some deemed the plan impracticable, especially with regard to transportation features; others looked upon it as the most feasible and economical solution of a country school problem of increasing perplexity. They say realized in it their hope of giving the country child all the educational advantages of the city; their vision pictured for this child of limited opportunities a graded and well co-ordinated system of education.

Superintendent John Eaton of Concord, Massachusetts, several years later reported that 120 towns and villages of that state had closed 250 out of 632 small schools and were transporting at public expense nearly 2,000 pupils to adjacent con-

solidated school buildings. In a few short years the consolidation of country and suburban schools became a settled policy, as shown in the budgets submitted by school authorities throughout the Union, for it had been demonstrated to their satisfaction that the centralized school more fully met their needs than the small district school.

Massachusetts' successful emergence through the period of experimentation caused other sections, as has been stated, to soon follow this advance movement for the benefit of country children and country folk. It is interesting to note, however, that this beneficent change, though originating, like so many of the others of the past, in the East, was quickly taken up by the West, with distinct improvements upon the original plan, Indiana having probably accomplished more in this respect than any other state of the Union, with the possible exception of Ohio. In fact, the school officials of Indiana and later Ohio, business men's associations actively co-operating, developed a plan for putiing transportation into effect whose details are even to this day considered standard. And now the Middle West waits no longer for the East to originate educational movements of any sort; Chicago, Indianapolis and Cleveland are second to no other section of the country in educational outlook.

I would disabuse the mind of the kind reader of any impression that consolidation has met with no rebuffs, with actual defeat in some instances. When citizens' and other kinds of associations are accredited too large a place in the operations of the school system, and are too often deferred to, the habit has then and there been developed in them of demanding that they be dealt with in any and all matters affecting the schools. If this be democratization, spare the word! When an ignorant or misguided but active part of the community gets such an exaggerated idea of their importance from these experiences that they become self-centered and so assertive in their demands that they attempt to block all plans that are regional rather than local, a very bad situation has been allowed to be

created. If the strong-minded and strong-handed official does not arise in such an exigency and "take the bull by the horns" (more or less literally), upon whom does the responsibility for lamentable results rest? The reason why some school systems lag behind others is not always far to seek.

A concrete instance appears timely. Some years since several communities, actually contiguous to one another, held four-room, six-room and two-room buildings, two of them frame structures and typical otherwise of the rural school. Because of the insistence of shortsighted persons these schools were gradually enlarged to eight-room, twelve-room and four-room buildings, brick, but with ungraded classes, which condition has continued to this day and promises to remain unchanged during the indefinite future. With a view to securing and conserving the economical and educational advantages previously cited, the suggestion had been made earlier that all join whole-heartedly in an effort to have a 24-room building, centrally located, with classes graded throughout, upon ample acreage, supplant the first-mentioned buildings. Having in mind what has just been said, the fact that this suggestion was not accepted tells its own story. Transportation was not a feature of the plan proposed, as the new consolidated building would not have been more than an easy walk for any child enrolled at the buildings referred to. But this was not in Ohio, nor Indiana, nor Massachusetts!

It may be well to state at this point with a little more clearness just what "consolidation of rural schools" means. There are two types of the consolidated rural school, the consolidated graded school of eight elementary classes, and the 6-3 consolidated school (six elementary classes and the junior high school department of three classes). Definitely, the consolidation of rural schools is accomplished when one large, centrally-located schoolhouse is substituted for several smaller ones located in villages more or less distant from one another, for the express purpose of instituting therein a complete for an incomplete course of instruction and of establishing articula-

tory lines of work that cannot well be followed in the smaller buildings supplanted. Whenever a school of this type results, when trades are taught, when a school farm changes indifference to this sort of activity to lively interest, when a worthwhile community center comes about and neighborliness among the villages affected follows hitherto troublesome local pride,—when all these things come to pass, then the "consolidated" school has in truth arrived, and the highest and best interests of the state and the community are being served. The school administrator has already learned that the addition of junior and senior high school facilities attracts youth, who thereupon find means to complete an otherwise interrupted schooling.

The method of effecting this comparatively new plan of school organization for country districts may be shown by what has taken place in villages A, B and C, in more or less proximity to each other, and in each of which until recently were small ungraded schools. The buildings at A and C were abandoned and a large building at B was constructed to supplant them, resulting in the changes indicated below:

BEFORE CONSOLIDATION.

	No. of Teachers	*Grade*	*Enrollment*	
At A	*1	4	5	
		3	9	
		2	7	
		2	7	
		1	10	— *31
At B	1	8	25	
	1	7	18	
		6	18	
		5	12	
	1	4	11	
		3	18	
	1	2	13	
		1	15	— 127

At C	1	8	5	
		7	14	
		6	15	
		5	14	
	1	4	19	
		3	12	
	1	2	9	
		1	20	— 108
	Total			266

* Means 1 teacher with 31 pupils in 4 grades.

AFTER CONSOLIDATION.

	No. of Teachers	*Grade*	*Enrollment*	
At B	1	8	30	
	1	7	29	
	1	6	33	
	1	5	26	
	1	5	35	
	1	3	39	
	1	2	29	
	1	1	45	
	Total			266

Consolidation here, as elsewhere, proved wise. A completely graded school resulted, the objections of some parents were met and removed, unusual social and educational advantages were secured, and time removed lingering soreness.

I have stated that consolidation has become well-nigh universal. Additional information as to the extent of this plan in the United States, and certain other data pertinent to the subject under discussion, are contained in a publication recently issued by the National Bureau of Education at Washington, entitled "Rural School Circular," compiled by J. F. Abel, Assistant in Rural Education. The following will be found therein:—

"The items are indicative of the size of the school system,

the degree to which it is centralized, the effort that is being made toward still further centralization by consolidation of schools and transportation of pupils at public expense, and the relation of the amount of money spent for transportation to the total current expenditures for all schools:

1. Numberof school buildings, 270,561.
2. Number of schools, 335,074.
3. Number of one-room schools, 185,835.
4. Number of consolidated schools, 11,986.
5. Formed in 1919-20, 1,116.
6. Children transported, 351,401.
7. Cost of transportation, $14,424,844.
8. Current expense of all schools, $888,727,569."

The testimony recorded below from those whose experience has been actual, factual, tactual with the matter under discussion, is valuable as well as interesting:

"Mr. Seymour Rockwell, Chairman of the School Committee at Montague, Massachusetts, largely responsible for the establishment of the Montague Consolidated School in 1875, wrote in 1893: 'For 18 years we have had the best attendance from the transported pupils; no more sickness among them and no accidents. The children liked the plan exceedingly. We have saved the town at least $600 a year. All these children now attend a well-equipped schoolhouse at the center. The schools are graded; everybody is now converted to the plan.' In the further account of this matter, while it appeared that Mr. Rockwell was supported by an overwhelming number of parents, he was represented by some who opposed him as being a 'disorganizer,' 'fifty years ahead of his time,' etc., etc. But he did the job in man-fashion."

In the Report of the Superintendent of Public Instruction of the State of Indiana for 1912 is the following statement relative to the high school department in consolidated schools: "Possibly one of the greatest results accomplished by the consolidation of the rural schools is the establishment of the

township high school. Students who could not have entered a high school had they been compelled to leave home, attend these schools, and, in most cases graduate from them. Consolidation has made it possible for the child of the rural districts to be under the direct control of the home throughout the elementary and secondary training periods. Many children in our consolidated schools who do not care to even enter a high school while they are working in the grades, and some who have no home encouragement for entering a high school, become interested in the high school work by observing the enthusiasm manifested by their classmates in their hope of entering upon and completing the course prescribed for these high schools. The consequences are that many children of the above mentioned class graduate from a good, commissioned high school, when they would have otherwise failed to complete the elementary schools had it not been for the consolidated school. The great increase of students attending the high school in Indiana in the last two years is due in the main to the work of the consolidated school."

Note how well the *junior* high school would meet such a situation. As the student draws toward the close of his elementary course, too often drifting and somewhat indifferent toward the long four-year course of the senior high school, he is attracted by the briefer period of study of the junior high school, a unit of itself and yet an integrated part of the whole school system, and the thoughtful and observant teacher, imbued with the spirit and one of the important purposes of the latter school, promptly recognizes the handling of this type as worthy of her best tact and skill, and rejoices, finally, over the consummation of a well-laid plan to have such youth respond to incentives for still higher things. She helps him to "find" himself during a "trying-out" period, and later "her" graduate from the junior high and finally from the senior high is pointed to with pride as a signal accomplishment. With such teachers in service, pupil mortaility loses its problem features.

In conclusion, as one reviews the advantages to be derived, that have been set forth in this paper, it can be readily understood why the consolidated school is a profitable investment for the State and an educational beneficence for the student.

BIBLIOGRAPHY.

"Rural Community Organization." Augustus W. Hayes, Assistant Professor of Sociology, Tulane University, La. Need of a rural policy—Significance of a changing rural psychology —The trade area—The small rural school district—The rural community variously considered—The consolidated school district—Organization of forces.

"Consolidation of Rural Schools and Transportation of Children at Public Expense." Arthur C. Monahan, Bulletin No. 30, 1914, Bureau of Education, Washington. History and extent of the movement—State legislation concerning consolidation—Transportation arrangements and cost—Cost of the consolidated school—Educational advantages of consolidation —Some types of consolidated schools investigated and reported —Macdonald consolidated movement in Canada—Agricultural and domestic science in the Harlem Consolidated School.

"A Study of Fifteen Consolidated Schools in Rural Communities; Their Organization, Cost, Efficiency and Affiliated Interests. George W. Knorr, Southern Education Board, Washington, D. C. Publication by the Bureau of Education. Types of rural schools—Organization—Cost of maintenance of consolidated school—Public conveyance of pupils—The consolidated school as a country life institution.

"Consolidation and Public Rural School Efficiency." George H. Betts, author of "The Mind and Its Education." The movement toward consolidation—The consolidated rural school—The consolidated rural school and the community—The rural high school—the consolidated building and equipment—How to effect consolidation—transportation of pupils.

"The Consolidated Rural School." Louis W. Rapeer, President Research University, Washington, D. C.; Author of "Rural Hygiene." National and rural consolidation—The American rural school—Community organization and consolidation—School administration and consolidation—The growth of consolidation—A visit to a consolidated school—The consolidated school site and its uses—The consolidated school building—The teacherage—Transportation of children, etc.

"The American Rural School, Its Characteristics, Its Future, and Its Problems. Harold W. Foght, A.M., Professor of Education, Midland College, Vt. Consolidation of Schools, Chapter IV.

The Lane

Do your work and e'er be kind!
Do not borrow
Useless sorrow
For to-morrow!
A yellow purse you'll find
In the mystic light of the lane—
In the little street
That's O, so sweet
In sunshine or in rain!

Do your work and e'er be kind!
With never yet
One tiny speck
Of envious fret!
A yellow purse you'll find
In the mystic light of the lane—
In the little street
That's O, so sweet
In sunshine or in rain!

—Minnie E. Hays,
Canajoharie, New York.

Patriotism and History

F. T. SPAULDING,

THE PARK SCHOOL OF BUFFALO, SNYDER, NEW YORK.

THE most recent lay judgment with regard to education has been pronounced upon the teaching of history. From numerous and widely different sources, criticism has been directed toward the subject-matter of instruction as presented in well-known texts on the history of the United States. Those who have contemned the books have charged the authors with suppression of information, distortion of facts, a point of view unpatriotic and essentially un-American. And so volubly and so acrimoniously has the criticism been supported that it has led to the ruling out of the offending volumes in a number of school systems and to the lay compilation of at least one "100%-American" text.

It is easily possible to discredit all this unorthodox disturbance on the ground that it is merely one evidence of the present mania for censorship of everything censorable. Or, as teachers rather than authors, we may protect ourselves by the assertion that the books are not of our making, and that the dispute touches their writers alone. But if we consider the matter without seeking immediate refuge, it is apparent that within the field of teaching itself there may be a sound basis for certain of the charges.

Two ends have been sought from the teaching of history in elementary and grammar schools: first, an interest in history for itself; and second, a usable knowledge of the facts of history which are essential to intelligent citizenship. The acceptance of these objectives has been almost universal; the wide variations which are to be found in the methods of teaching history are to be explained, not primarily by disagreement as

to fundamental purposes, but by the difficulty of adjusting these purposes to the characteristics and abilities of children of grammar-school age.

For, in the teaching of history, as in all subjects which have to do with human relationships, we encounter at the outset two different mental processes—one type based on the emotional and the other on the rational faculties. Interest in history is easily created by emotional appeal: the romance of the far-away or the long-ago appeals even more quickly to children than to the most romantic of adults. If the first objective only were to be sought, therefore, the problem would be simple: an intense interest in history for its story is one of the easiest ends to attain. The difficulties arise when we must lead children to make rational use of the facts of history. This means, first of all, that they must acquire a reasonably complete and systematic understanding of facts—almost always a difficult and distasteful process in itself; and second, that they must learn to interpret those facts through an intelligence and a maturity which, though constantly growing, can never be expected to be completed by the end of the grammar school course.

Out of the vain attempts of teachers to meet both objectives at once has frequently come a final desperate abandonment of either the one or the other. "The superintendent, the principal and I approve the attitude of Professor H. Morse Stephens when he says that he cares little how much students know when they enter his classes in history at the University of California, but that he is very much concerned how *interested* they are in history."[1] This is the refuge of many teachers who find facts the deadly enemies of a living, breathing interpretation of the story of man. Completeness and proportion alike must be sacrificed, since interest is always at stake; chronology is of slight importance,—it is the "psychological moment" alone which counts. Such teachers forget that of

1 Kendall and Mirick: How to Teach the Fundamental Subjects, p. 263. (Incomplete quotation.)

the thousands of children who may become interested in history in the elementary school, hardly one in three will have either opportunity or incentive to acquire a later systematic knowledge of its facts in the secondary school, and not one in ten will study it in a university.

And to those teachers to whom a knowledge of the facts of history is the prime essential, there seems possible only the dwelling on simple facts until they are mastered, even though interest must completely disappear. Battles, kings, presidents; kingdoms, empires and republics; names and maps and dates; the history of America and England and ancient Egypt and Greece and Rome: all these cold facts and more are iterated and reiterated, in chronological order, or something like it, until some of them must surely stick. And probably they do stick—some of them; but history is "fierce—I hate it!" and the facts which have somehow stuck are dislodged with a grimace as soon as may be.

These pictures are extremes, to be sure, and yet not altogether absurd extremes, for in one or the other of them are recognizable far too many elements of history courses in present-day grammar schools. Through the recognition of such elements we are enabled to discover in part the bases of the charges that present-day teaching of history is unpatriotic and un-American.

For if it is the interest in history alone which counts—the romantic, subjective, story-element—then the farthest away and the longest ago can hardly fail to count for most. War and disaster will be more interesting and more important than peace and prosperity; the story of strange peoples and foreign lands will outweigh in value the discussion of present conditions in our own land. There is much in common between purely romantic history and foreign missions. And from such teaching can hardly fail to spring a point of view, perhaps not unpatriotic and un-American, but lacking by far in well-balanced and intelligent understanding of the problems of our own day and of our own nation.

And if, on the other hand, the facts of history must outweigh its potential interest, the results will be quite as unsatisfactory. The aversion which has come from a forced study of bare facts is very likely to be translated into something approaching boredom with the affairs of the country about which those facts revolve.

Despite the present agitation over the matter, this question of the detailed historical facts which are to be taught in our elementary and grammar schools is of far less importance than that of the point of view which boys and girls are led to take toward history in general,—toward the history of the world as well as toward the story of the United States. If they can attain an understanding of the basic motives and impulses which are working behind the history of today as they worked behind that of centuries ago, if they can trace the broad effects of these influences in the story of their own nation and of the world, then there need be little fear that they will be led astray from a fundamental patriotism by traditions concerning the Boston Tea Party and the War of 1812, in whatever form these traditions may be presented. It becomes the task of the schools, therefore, so to combine the objectives of interest and knowledge that this broad and fundamental appreciation may be assured.

This must mean, in the elementary grades, a predominance of the emotional element. Romance is the foundation of interest for little children, and since the truths of history are essentially romantic, let history and romance be to them one and the same. So may they gain, from their study of history, an interested understanding of ancient people and far-off events, and, by the comparisons to which they may be directed, an appreciation of people and of happenings in their own day. All of history must at first be for them either long ago or now. Exact chronology is therefore not essential: it may well be sacrificed, as occasion demands, to the "psychological moment," the topical arrangement by which their history be-

comes, not a subject to itself, but a very real part of all their school work and of their lives.

There must be, even in these lower grades, however, due regard for completeness and proportion. The World War has awakened us to a fact which before 1914 we had begun only dimly to appreciate: that a patriotism which is to subsist on other than pure emotion must be generous and far-seeing, and not of the type which recognizes no other land or race or time than its own. Elementary school history should therefore not concern itself solely or chiefly with Puritans and Indians, or even with the later events in American development; it must be fairly—though of necessity superficially—representative of all ages and of all peoples, and of every great land in the world. The romantic background which it sets should provide a source of emotional recognition and appeal for every step of the more consciously rational study of the grammar grades.

With the broad interest thus afforded as a foundation, the function of the upper grades would seem to be simply that of providing for the pupil a body of carefully selected and organized facts, which would be comparatively easy to assimilate because of his very real interest in the subject, and which would collect the scattered information of the previous grades into a compact and unified whole. But to be truly valuable, history should be more to boys and girls than the memory or even the enjoyment of a connected story. It should entail an understanding of great causes and results, an appreciation of fundamental values, an ability to discriminate and to compare. It is from the need to recognize these rational elements that there have sprung the greatest divergences in the methods and scope of teaching history.

The question of scope has hinged chiefly upon *how broad* and *how deep*. Shall we teach United States history only? Or shall we add the European background of United States history? And shall we take up also the history of England? Or should our pupils study the story of the whole world?

Whatever we teach, must it be in careful, exact detail, or may we be content with merely a general knowledge and an acquaintance with only the most striking of outstanding figures and events?

H. G. Wells's "The Outline of History," and Hendrick Van Loon's "The Story of Mankind," have presented more clearly than ever before the fact that true history cannot limit itself to the story of one nation or one people, but must consider all countries and all races. There can be no true understanding of United States history, that is to say, which is not founded on an appreciation of the development of all mankind. Not even "European beginnings" furnish in themselves a sufficient basis of understanding. For underlying those European beginnings and accompanying the history of the United States to the present day is a great current of human growth and progress of which the story of our own nation is by no means a completely representative part. It has become clear, therefore, that a part of the history studied in our grammar schools should be the history of the whole world; and that that part, furthermore, should be presented not in the form of disconnected stories of the Egyptians and the Greeks and Romans and mediaeval Europe and England and the United States, but as a progressive and harmonious narrative of the life on earth of all mankind.

If upon such a foundation we may place our separate study of United States history, we shall provide for our boys and girls two different views of their country, and both of those views are true. We may expect them to see it first of all as one of a great company of nations which together have grown, through long centuries, from ignorance and savagery to a wondrous degree of knowledge and power and understanding; which have been engaged together in making the world—even that part of the world with which we ourselves are chiefly concerned—a better place for all of us; which, though they have fought sometimes *with* each other, have fought also many times *for* each other; and which must, of necessity, go

on living and working together for the happiness of mankind. And we may expect them also to see the United States as *their* nation—a country in whose victories and in whose defeats, as well of peace as of war, they have a very personal interest; whose faults and whose virtues both, they recognize and understand; in whose present and future they are as truly interested as they are in their own.

There arises, however, as an apparent obstacle to such teaching of history, the contention that the limited amount of history which we are now providing is all that children are able to master within the short years of grammar-school education: how, then, can we hope to add to that grammar-school course a study of the far vaster story of all mankind? In so far as this contention involves the treatment of world history, Mr. Wells has pointed out its weakness when he says that "*history as one whole* is amenable to a more broad and comprehensive handling than is the history of special nations and periods, a broader handling that will bring it within the normal limitations of time and energy set to the reading and education of an ordinary citizen."[2] For the grammar-school course the study of world history may entirely supplant the detailed and meticulous study of English history or of Greek and Roman history which frequently precedes or follows the study of the history of the United States. And even in the separate study of United States history, the broad view of the subject which has already been gained through world history will make possible both a more efficient and a briefer treatment. The study of world history will become, therefore, not an entirely additional or supplementary course, but one which occupies the place heretofore demanded by less valuable studies.

The objection set forth above involves, however, an implied satisfaction with the usual methods of teaching grammar-school history which it were well to examine.

Chief among the problems of method has been that of organ-

2 H. G. Wells: The Outline of History. The Macmillan Company, 1921, Vol. 1, pp. v. vi.

ization of subject-matter. In history as in other grammar school subjects, the popularity of the project method has brought forth a host of supporters of the topical method of presentation. The demand of such teachers has been for an organization of subject-matter which will make everything studied at a given time as nearly as possible akin to some one topic. The topic may be general—transportation, houses, what we eat, and the like—or it may be occasional—Armistice Day, Thanksgiving, the period of Clemenceau's visit to America. In either case the study of history—and with extreme adherents, that of English, arithmetic, geography, nature study, practical arts, and all other subjects as well—must be related directly to the topic under consideration. So it may become evident to pupils that their subjects of study are not water-tight compartments, but are directly related to each other and to life in the world outside.

There is a further method of topical organization which makes one subject of study the basis for the organization of most of the rest. Under this system a project in mathematics may draw to its aid the pupils' work in practical arts, in history, in English, in science; the work in the latter subjects will be based to a very large extent quite as much on the organization of the mathematics as on their own needs. Here, too, may pupils feel that their subjects of study are not narrow and formal, but that each throws light on all the rest.

The value of motives and projects in education is not to be questioned. But from the point of view of upper-grade history the resultant of the extremes of topical arrangement may be a formless, disconnected, illogical presentation, which prevents completely the attainment of those rational elements so much to be desired. Carried to extremes, the study of transportation, houses, and so on, may mean for the history course a splitting up into vertical sections, each complete from long ago to now, but each standing on its own base alone, without definite connection with others and with many and wide gaps on each side. Children may learn thoroughly the history of

transportation and the history of houses, that is to say, without realization that the two stories are but elements of a far greater current of history; and since the Nineteenth Amendment has to do directly neither with transportation nor with houses, it may fall entirely outside their study. The organization of history in these upper grades pure or chiefly upon current topics is open to similar criticism: its cross-sections prevent, rather than aid, the understanding of history as a story of connected and related growth. And a course in history which includes the study of world history as well as of United States history is in little need of topical arrangement in order that it may be vital and meaningful to upper grade children. The story of all the world must be to a greater or less extent the story of everything in and about that world: it is neither a compartment of itself, nor does it recognize other compartments.

Yet, though the extreme of topical arrangement is a danger always to be avoided, the opposite danger of year-by-year chronological arrangement is no less to be shunned. We have by no means entirely outgrown that conception of education which held understanding of history to be based chiefly on accurate memory of dates, presidents and battles, just as it judged proficiency in geography by ability to list the States of the Union, their capitals, their mountain ranges, and the five most important products of each of their principal cities. In demanding accuracy we are still far too prone to insist upon exactness of detail rather than upon the truth of general impression.

It is this insistence upon exact detail which has been responsible for the organization of many United States history courses on the basis merely of presidential terms. By the presidents ye shall remember them; and to this end the presidents have been memorized in order, with the dates of their administrations and their most important acts. Yet the history which we ourselves have learned since our grammar school days has been acquired in no such reverse order. It

is the World War which recalls to us President Wilson. "Woodrow Wilson, 1913-1921," is hardly the peg upon which we hang our memories of America in France.

So, too, has history suffered from over-insistence upon dates. A study of the Civil War which emphasizes the date of the Emancipation Proclamation, but which ignores the considerations which led President Lincoln to issue the Proclamation in September, 1862, rather than at the beginning of the war—that is a type of study in which judgment and understanding can gain little training, however memory may be improved. But let the causes and reasons be emphasized, and neither they nor the fact of the Proclamation will be easily forgotten; nor will the date itself, even though it must be calculated rather than remembered, be set far out of place.

There is danger, in other words, that in attempting to make of history a story of logical and consistent development we may degrade it until it becomes little but a feat of memory—the prompt and accurate recollection of this or the other happening at a certain definite time. From such a study there can be expected little of the true understanding which we believe essential to intelligent citizenship and to true patriotism.

It is evident that the type of understanding which we seek cannot be based chiefly upon chronological detail; nor can it be gained by a sacrifice of all time and sequence to meet the demands of a topical arrangement. It must come from a method of study which seeks a balance between the topical and the chronological—a method which recognizes as of most importance the unified chapters, rather than the pages, of the history of our country, and yet presents those chapters always as parts of an ordered and logical development. The periods of discovery and colonization; the growing desire for freedom and the achievement of independence; the precarious first years of the new Nation; its growth in population, in territory and in self-confidence; the hidden fester which broke forth and was done away with through the anguish and suffering of the

Civil War; the convalescence of the South and its final true union with the North; the appearance of the Nation as the greatest of the world powers: these are chapters upon which may be based true interest and understanding and appreciation. Given such a foundation as this for study, and the names and places and dates which are of real significance will follow; they will prove essential parts of the whole, instead of mere clumsy tags on mental filing-cards.

And upon this study may be founded the broad appreciation which we need,—a view of the life of the Nation which sees the Boston Tea Party as a mere incident in the colonists' assertion of their right to freedom and self-government; which interprets the War of 1812, whether right or wrong in its details, as an evidence of the growing self-confidence of the Nation; which regards all the international commitments of the United States, from the time of the Monroe Doctrine to President Harding's Disarmament Conference, as indications of the part which the United States must be prepared to play in the world of the future.

All that has been said of the history of the United States applies equally, in its general implications, to the teaching of world history. There must be the study of "ages and races and nations," rather than of "reigns and pedigrees and campaigns," in order that history may mean for boys and girls the general laws of which Wells speaks, and not the mere "clustering multitude of details."

Thus planned and thus taught, we may expect of elementary and grammar school history an interest and a significance far beyond our present achievements. Its romantic appeal, begun in the lower grades, will grow year by year. The generally chronological study of world history, following upon the earlier less formal arrangement, will make possible a realization of the place of our country among the nations and peoples of the world—a realization which will render more appealing and more significant the study of the United States as a separate nation.

If there is truth in our assumption that lack of patriotism may be due in part to misunderstanding of the story of our nation, or to lack of sympathy with that story, then study of this sort will do much to waken in boys and girls a sound and lasting patriotism. For, to their own nation, when they truly appreciate its life-story, its difficulties, its faults, its virtues, and its greatness, they can hardly refuse their affection; and an intelligent and understanding affection is the basis of the finest patriotism.

Teach Me The Joy

Each drop is a song in the heart of day,
The Bluebird knows, for I heard him say;
He has learned his lesson o'er and o'er,
Sitting still at the rainbow door;
When skies are sunny he sings his lay
Learned from the rains of yesterday.

Each drop is a song in the heart of night,
The Bluebird reads the notes i' the light
O' the lantern moon that swings above
The orchestra in the House o' Love;
When nights are starry he sings aright
Songs from the rain of yesternight.

Oh teach me the joy in the song of the rain,
Dear Bluebird, sing to me again;
Oh Bird of Lovers, ages old,
Sweet troubadour of the starry wold,
When life's bright skies grow grey again
Teach me the joy in the song of rain.

—Grace Gordon,
Moorestown, N. J.

Some Educational Values in Laboratory Work

W. G. BOWERS, PH. D., HEAD OF CHEMISTRY DEPARTMENT,
COLORADO STATE TEACHERS COLLEGE, GREELEY, COLO.

MANY previous discussions have emphasized the importance of laboratory work for chemistry students all along the line from beginners to advanced students. But all that has been said has not proved that laboratory work is absolutely necessary to the beginner in chemistry. Yet in connection with the relating of hypothesis, theory and law, which is the biggest problem in any science, and by far the biggest in chemistry, it is important for the beginner to have laboratory work. Whether the beginner does the laboratory work himself or sees some one else do it may or may not be material, but the fact remains that it should be done and the beginner must be acquainted with the processes by which it is done.

If it were not for laboratory work, we would know no such things as facts or laws. Everything would be guess work, and even theories would fall to the rank of hypotheses. Obviously we would not have to go to a specially equipped laboratory to prove the law of gravitation, but in the realm of pure chemistry, we would have to go to the chemical laboratory to prove that anything is law or fact.

We do not need to cite many instances to establish the latter statement. To establish the fact that water decomposes into two volumes of hydrogen to one volume of oxygen required careful laboratory work. To prove the fact that ordinary fire is oxidation by oxygen from the air, required laboratory work by a genius. The law that the volumes of gases reacting and the volumes of the resulting gases have relations expressed by small whole numbers would never have

been determined without delicate apparatus in the laboratory.

The law, that the same elements entering into the same compounds always do so in definite proportions by weight, would never have been established without most delicate instruments in skilled hands in a laboratory. Now if a theory is the best explanation of the relation of facts, there would be no theory without facts, and there would be no theory without the laboratory to find facts and relate them. Hypotheses would be only guesses as to the phenomena concerned with masses, and we would be without even hypotheses in chemistry if it were not for the work in the laboratory.

John M. Tyler, School Rev. 6: 716; 98, says, "The scientist never arrived at anything without a scientific guess first." Obviously he meant the very first guess before the investigation necessary to develop a theory, if a theory did come between the guess and the establishment of a law. In either case the laboratory investigation is necessary. Laboratory investigation, of course, does not always develop a theory and finally a law from an hypothesis. Often an hypothesis remains an hypothesis, and often it is dropped from the category after years of painstaking laboratory work. So it is not the beginning of laboratory work or any stage in laboratory work that marks the distinction between hypothesis and theory. But it is the laboratory work which produces the facts connected with both cause and effect which establishes the explanation of the phenomenon. And it is the laboratory work which determines whether or not there is ever an exception in certain relations of cause and effect, and which establishes a law.

We could not even imagine the principle of Van't Hoff-Le Chatelier being established by observation made outside the laboratory. There are, of course, natural processes going on involving, as we can observe, great changes in conditions of temperature and pressure, but we could never discern displacement of equilibrium in chemical reaction accompanying

these changes. In the first place it is difficult enough to distinguish a chemical change without the work in the laboratory. This would not only be difficult but impossible to a person who has not had sufficient laboratory experience to enable him to tell from ordinary appearances whether or not a chemical change has taken place. In the second place, even the expert observer could not tell without accurate laboratory work whether or not there has been a change of equilibrium and in which direction the change of equilibrium has taken place.

In addition to the establishment of laws and principles, the laboratory has done a great deal and will do a great deal to bring to the students' minds an understanding of these laws and principles.

H. N. Goddard, Sch. Sci. and Math. 16: 710—says, "The purpose of the laboratory is to give adequate experience and objective illustration for an understanding and appreciation of a science, and to give an understanding of the application of these to common processes and phenomena. The laboratory has accomplished much of this. But the current methods operating in the laboratory, which is supposed to develop a power and habit of scientific thinking, have overlooked to a large degree the necessary conditions of reflective thinking." As to Goddard's latter statement, we are giving expression later. But as to the understanding of a principle, we would be inclined to say that the laboratory has not only done much of this but it has done practically all of it. As an example the beginner might be told that water will vaporize in a closed container until a point of equilibrium has been reached and then it will stop, but the student will not understand the reason for this until he comes in contact with the phenomenon as it operates.

Scientific Thinking.

Sigerblom, School Sci. and Math. 10: 18 (1910) says, "The laboratory work calls for a scientific attitude, an unprejudiced

honesty of observation." It might be said in this connection that any student knows when he enters the laboratory that he is not there for the purpose of guessing at things. He may have had many guesses connected with the work, but some of them came before he entered the laboratory. If while in the laboratory he satisfies himself as to the truth or untruth of them and more guesses come while in the laboratory, he prolongs his stay there to prove the truth or untruth of them. And, if gueeses come after he leaves the laboratory, he is liable to go back, not to get more guesses but to test the correctness of the guesses he has had. The student does not work in the laboratory to remain at the proposition until it comes his way. He is there to find out the proposition's own way of coming out when he adjusts the conditions.

Laboratory work is necessary to scientific thinking for the reason that in most laboratory exercises, the story is not told nor the problem solved, as long as the worker deals with spectacular observations, or gross facts. Laboratory work leads the worker on to scientific observation and to a breaking up of facts into simpler elements. It is data received from actual laboratory work that impels the student to think constructively, to make recombinations of mental processes, and to combine ideas that have never been combined before. The relation of real apparatus in a combination set up for certain series of reactions enables the student to imagine new combinations of apparatus for new series of reactions as he imagines they might occur. And the presence of the material apparatus makes a more vivid mental picture which aids in imagining the processes.

John M. Tyler, School Rev. 6: 716 (98) says, "We imagine only after getting some impression of realities. We put together small pieces of what we really saw, and build new structures." We might add that the student gets his real impressions of a few elementary things in the laboratory and thus enables himself to work out larger things. Occasionally, the chemist may start with his observation of an iron

chain in the blacksmith's shop; but he has to go into the laboratory and work with the test tubes long and laboriously, analyzing and synthesizing ideas, analyzing and synthesizing compounds, reasoning from the simple to the complex, relating group to group in various ways, before he can establish a classification of thousands of the organic compounds in the chain series.

We heard a good chemist say one time, after he had constructed an imaginary molecule with wax and tooth picks, that he believed we would do more for chemistry in the future with wax and tooth-picks than we would with test-tubes. This is all right, perhaps, if he considers the first block in the foundation more important than all other blocks put together, or it may be true if he speaks figuratively of what is done for theory as amounting to more than what is done for practice. But we would be inclined to say that if scores of test-tube experiments could not come around and between every pair of wax and tooth-pick figures, we could never build a structure in chemistry, and that the cornerstone would be all that would ever be to the building. The observation of a ring in a jeweler's store or the putting of one together with six balls of wax and six tooth-picks could never establish the benzene ring theory. Aside from the practical results of this fundamental theory, the test-tube experiments necessary to establish the theory itself, and the thousands of test-tube experiments necessary to bridge gaps and fix relationships between groups of compounds, have been responsible for the making of many a scientific thinker.

William Congor Morgan, Sc. Sci. & Math. 8: 645 says, "The aim of education should be to develop thinking, feeling, and willing beings, men who wear out but do not rust out, men of keen and accurate observation, sharp and logical reasoning, possessing the ability to use the knowledge gained in school to plan independently." Morgan's first attribute to education would mean thinking which impels one to action. This sort of thinking might not always be scientific thinking;

but when it is, the laboratory action is what would follow in the realm of chemistry, and the laboratory work would develop more thinking, and the work of connecting realities with the thinking would tend to develop the man who wears out rather than the man who rusts out. The laboratory observation would develop keenness and accuracy in observation, and lead to the sharp and logical reasoning. Thus we can imagine no work in education which forms the ability to plan independently better than does laboratory work.

A. J. Mathews, School Science & Math. 16: 767 points out the fact that all eminent educators say that the laboratory is intended to develop ingenuity and facilitate scientific reasoning. Mathews says that if laboratory work has failed or is failing in this it is because we go at laboratory work like fattening a goose, that we pick out what we think is good and cram it in. If we were to carry the goose illustration further, we might conclude that laboratory work would not fail to facilitate scientific reasoning if we could pick out what would develop the goose and not be so inclined to fatten him. We expect to deal somewhat with the methods involved in the picking in a later article. We might say in this connection, however, that inasmuch as laboratory work is uneconomical as a means of obtaining information, it would be difficult to pick out things that would fatten the goose. And since complicated chasms have to be crossed in most exercises, it would be easy to pick the ones which develop the goose.

Individual Freedom.

In discussing individual freedom in the laboratory, we are taking it for granted that all understand the importance of this phase of the work in advanced courses and especially in research work. Not many will agree, however, that we could turn a high school student loose in the laboratory to do as he pleases. Then, too, we would have to agree that the begin-

ner who could be allowed unlimited freedom in the laboratory is one out of a thousand.

Dr. Elliott says, Sc. Sci. & Math. 6: 703, regarding his special permission to work in the laboratory at Harvard (which was granted to him only because he was an unusual student), "I profited by the only chance given in Harvard and have never forgotten my obligations." Before chances like that are given to students in general, a great deal of regulation work must be done to limit this freedom of students in the laboratory as far as freedom of scientific thought is concerned, though the more carefully the regulations are thought out and enforced the more freely the individual thoughts come to the student.

L. C. Newell, Sci. Science & Math. 7: 165 says, "Demonstrations please a majority; informal conferences help a minority; examinations irritate a plurality; textbooks are studied and believed, but the real mental work begins when the student enters the laboratory." It can be readily seen that both the questions and their answers, that both the problems and their solutions are thrust upon the student by the demonstrations, informal conferences, and textbook lessons, and so the student has his thinking done for him in other classes. But in the laboratory (well regulated) the questions and the problems are there with the means of finding the answers, and the student's work is to think and perform it through to the end. One might say that this is task instead of freedom, but it really is not task unless the director of the laboratory compels the student to think in certain set ways. The good instructor watches and guides the student out of wrong or dangerous paths, which guidance is not considered infraction on freedom in any way.

Neil E. Gordon, School Science and Math. 21:862, proposes as one of the advantages in laboratory work the freedom of the student to collect and possess. He says, "The fact that the student is going to save his specimens causes him to be more efficient." This is absolutely true and may

be, to the shallow undeveloped student, the greatest incentive to care and accuracy. But after the student has worked on this basis for awhile he learns, as was expressed by E. R. Downing, School Review 25: 646, that the greater opportunities come to him in the form of a complete type of reflective thinking, his freedom to collect his own data, tabulate his own facts, devise his own hypotheses, test them out, and formulate his own judgments. This develops habits of scientific thinking and develops self-reliance in formation of opinions. This is freedom brought by the institution of the laboratory.

Holding Interest.

F. S. Kedzie, Sc. Sci. & Math. 5: 309 (1905), says that we do not need to burden the student with learning laws, theories and definitions, that the laboratory work will call for them in turn and the student will get them almost automatically. It would seem too much like an educational Utopia if this could be done in case of all of the fundamental theories, laws, and definitions. It can, however, be worked in many cases to the extent of keeping up interest such as to make easy approach to the more difficult principles. First-hand contact, observation of realities, satisfaction of curiosities by self-experience, are what make for interest. The heating of iron to redness and cooling it to its original condition, then heating it again until it is changed to the black oxide, furnishes a good approach to the explanation of the difference between physical and chemical change.

The labor of committing to memory definitions of compound and mixture may be made easy and even delightful by leading up to it with such an experiment as: mixing intimately powdered copper and flowers of sulfur and making observations on the mixture, then heating the mixture until the two elements unite, and then making observations on the compound.

The mysteries of ions may not appear so deep if a discussion is preceded by the precipitation of silver chloride from silver nitrate by sodium chloride in water solution, and fol-

lowed by an attempt to accomplish the same by contact of the dry substances.

Arousing of curiosity and satisfying of curiosity as a means of holding interest are accomplished in literature best by the dramatic methods. It would seem as though the same methods, as far as could be applied in chemistry, would hold good. The nearest we can come to having a play in chemistry is to have the materials in their appropriate containers, bring them in contact with each other by different avenues of approach, and either suspend or satisfy the curiosity by observing their reactions. If it is a case of no reaction or an unexpected reaction in the first compartment of the array of apparatus, so much the better, the impression on the mind is deeper when the expected reaction does come. One who had never studied chemistry might argue that such an analogy is far-fetched, that the things of chemistry are too far beyond the ordinary. But our point is this: In the laboratory we can begin with things like fire, which are as common, if not at times as exciting, as villains and aristocrats, and even lovers; and carry a series of plays up to things like valence and ionization which are as mysterious as love and hatred.

It would seem as though, if the laboratory were used in the best way, it would serve as well to cultivate interest in chemistry as the stage does in literature.

When we think of the theater as a place to study literature, we generally think of the audience as students. But it is a rather safe guess that those taking part in the play are getting the greater educational values from the work. And so it is in the laboratory exercises; the individuals who perform are getting the educational values from what goes on.

While we have never been able to estimate from any sort of examination the gains through the development of curiosity or observation, the cultivation of scientific thinking, or the creation of interest, by laboratory work, we feel safe in concluding that these values gained from the laboratory are

of greater educational worth than the gathering of a fund of information.

Edward Howard Griggs in his book, "Self Culture Through the Vocation," says, "In every vocation the meaning of the work is less in the thing done than in the growth of the man through the doing. So today everywhere we insist that the natural sciences must be taught by laboratory and field methods. Such methods are laborious and slow: a student may learn more theories and laws in a week's work with a well written textbook than he can acquire in a whole term of laboratory and field work. Why require the slower method? Because a little of the power to look Nature in the face and see one fact at first hand is worth more than memorizing the best *Sixteen Weeks in Zoology* any one ever compiled." We feel that this means more to us, coming from a literary man, than it would if it came from a scientist.

We can imagine now that some of our readers are saying, "You have not yet gotten down to brass tacks as far as the value of laboratory work is concerned." If that is true, it is because we have not aimed to get so practical as yet. We have tried to appreciate the fact that in this sort of education the subject should know a little about what brass is before he undertakes to get down to brass tacks. So we have aimed to treat only with some values that are rather strictly educational. In a subsequent paper we hope to deal with some of the commercial values of laboratory work.

The Teacher-in-Training and Society

NORMAN FENTON, TEMPE NORMAL SCHOOL OF ARIZONA.

THE teacher in the school, which is at once a miniature reflection of adult society and a social entity in its own right, as Dewey pictures it, has many intellectual obligations. Not merely are there many features of child nature to which she must be sensitive, but likewise there is the diversified character of present social and economic life which she must be able to make vivid to the children in her classes. For the teacher really bridges the gap between the school and society; and she must understand and sympathize with both. This paper will deal with some possible means of preparing the teacher somewhat more systematically for her work as interpreter of modern life, and of increasing her teaching power through more profound knowledge of the personalities of the children she teaches.

In view of the relationship of the school and society, the teacher's equipment must contain descriptive details, when possible first-hand, of many aspects of present-day social, economic and political life, or contemporary civilization as it has been called in another connection. These substantial needs generate a great responsibility in teacher-training institutions, a responsibility only met by including besides the theoretical courses many practical features in the curriculum, utilizing in teaching as much as possible of the substance of modern life in the immediate vicinity of the normal school, such as factories, farms, civic institutions, and the like; and not stopping there, but even investing in travel by taking its students to other places in the state that directly bear upon what they are to teach. And above all, the interest in collecting useful descriptive data, sample exhibits, pictures, etc., must be stimulated, and means provided for the proper organization of the

material, as manila folders, mounts and the like. The teacher-in-training must be preparing material for classroom use, going to places likely to have bearing upon what she may teach and accumulating stores of concrete experience in preparation for her work. The fact that the student usually does not know beforehand what grades and often what subjects she is to teach, instead of being an argument against this sort of thing, is the best argument for it. The senior had better have materials for any subject and any grade, not simply be waiting and expecting to find things at the school she goes to, or to round up things later on, when actually on the job. The experienced teacher usually has accumulated materials on her own initiative after beginning her teaching. How much better, though, for the beginner to have these resources with her for use during the first, confused days of her actual teaching life!

There are three main lines along which practical courses may be developed in teacher-training institutions. These are economic, political and social. The following sections on political and economic life are descriptions of courses developed by the writer in co-operation with others of the faculty and now being given at the Tempe Normal School of Arizona; the one on social life is suggestive of possible future development. There is nothing new about visits to industries—a special course in them, however, insures a greater thoroughness and better organization of the students' materials.

I. Political Life.

In stimulating interest and giving concrete experience in the workings of government, we have utilized this year the proximity of the Tempe Normal School to Phoenix, the capital of the State of Arizona, in getting state officers to come and describe their work. As these men and women are busy during the day, the lectures are all held after dinner in the evening, and are followed by receptions at which the students are given an opportunity to meet the speakers and to ask them questions.

This year, Governor Hunt opened the course with a descrip-

tion of the work of the governor. Following him will come the State Auditor, who will give concrete details of how the state finances are run. The State Superintendent of Public Instruction is to speak on the work of his department, utilizing the opportunity also to distribute copies of the state course of study and school laws and to discuss the more important blanks and forms which these future teachers will encounter in their work in the schools of the state. The important state officials of Health, Child Hygiene and Child Welfare will also be represented by officials who will describe the workings of their departments and give out copies of the literature their agents distribute throughout the state. These latter departments are especially significant to the teacher, and her active co-operation is really needed in making their work a success. The State Game Warden will describe his work and possibly bring along mounted specimens of the principal game of the state.

Other lectures will be added, such as the judicial features of government and the work of a congressman or of a senator; likewise, the smaller governmental units may be represented by the mayor of a city, or some county officer. Students have also been given an opportunity to visit the state capitol. In the event of the convening of the legislature in special session, opportunity will be given for another visit at that time.

II. Economic Life.

One thing teachers need especially is intimate knowledge of modern industrial life. There are many possible uses of this knowledge daily in the school. Yet it is unwise to take for granted that normal school students will visit industrial plants or other places of interest of their own initiative. The course at the Tempe Normal School, in fact, developed from taking a show of hands on the number of students who had been through a cotton gin. Except those residing in the vicinity, only a small percentage had visited one, although there are two cotton gins in the town. And those who had gone previously had little concrete teaching material to take with them into the

schools. When one considers the joy of teaching something known from personal experience and not merely from the vague imagery of text-book description, the obligation really devolves upon teacher-training institutions to insure that their students get all possible first-hand contacts with industrial features of modern life.

As given at the Tempe Normal School, a course on some of the industries of Arizona takes four Saturday mornings and two entire Saturdays. The groups are limited to twenty-five and the trips repeated at intervals so that all may attend. The trips are preceded by lectures on the industries in question given by members of the faculty. These lectures are given with mimeographed outlines which the students partly fill in at the lecture and complete later on when visiting the industrial plants. The notes are the permanent possession of the students, who take them along with them and utilize them in their teaching. Where convenient, each student will be furnished with sample exhibits; for instance, wheat in its various stages on the way to flour; or cotton, exhibiting blossom, the bolls on the stem, the seeds, etc. These concrete adjuncts of instruction are likewise part of the teacher's "kit" when she leaves for service in the schools of the state.

This year's trips include the following industries: a flour mill, bakery, cotton gin, creamery, dairy, packing plant, ice plant, ice cream factory, candy factory, power plant, newspaper (at the time of going to press), foundry; places of agricultural interest not specifically studied in connection with the required work in agriculture, as a date farm, entomology station, orange orchard, cotton field (observing the picking of cotton); also, there will be a visit to a building in process for purposes of getting data on modern methods of building construction. Other visits will be added as arrangements are made.

It is projected further as a reward for successful effort in these two courses, and as supplement to the latter, to include a trip covering two hundred miles of travel. Students will

be given an opportunity to go through a copper mine and to visit the great smelter at Miami. The group will return by way of the Roosevelt Dam, a place which people come from all over the world to see, and which should certainly be visited by all the teachers in the State of Arizona. Information about reclamation will be summarized in mimeographed form at this time; likewise, pictures of Roosevelt Dam will be given out. This trip will be arranged by the school authorities, as will other shorter trips to places of significance to teachers, including Casa Grande, thirty-five miles from the school, where there are some extremely interesting remains of an ancient civilization, the government expert in charge being the lecturer on this occasion.

III. Social Life.

The teacher should have a vivid realization of community life, especially with reference to the home environments of the children in her class. A good technique to be followed in carrying this out is that of the social worker, more particularly the psychiatric social worker. Teachers need the viewpoint which relates the individual's personality to his social background. And nothing develops the social imagination as much as concrete cases of human lives.

The aim of this work should be to cultivate in the future teacher a desire to appreciate not merely the social origins of her children but more especially *the attitudes and ambitions of the pupils in relation to home background.* Many vital features of character formation and of later happiness hinge upon this. And right here is the means of meeting the most important issues of mental hygiene. For herein are the potentialities of directing tremendously significant factors of moral well-being by teaching a child to face reality, preventing the accumulation of the pain of inferiority or the handicap of disproportionate superiority and the moulding of all the many motives usually summarized under ideals and aspirations. The teacher will realize that seated before her are not a lot of children, first to be disciplined and then to be taught; but

rather children whose parents are rich or poor, loving or indifferent, intelligent or foolish, and who themselves have personalities that have special hopes, sensibilities and indifferences. If the children feel the teacher's sympathy, this genuine interest in them will be the basis of true rapport, the remaking of attitudes towards the teacher, and the destroyer of many disciplinary problems. A certain real teaching power comes with this background knowledge, which gives a fine feeling of sympathy or community of understanding; as most children respond quickly to personal interest on the part of the teacher.

The teacher-training institution located in the large city has much more opportunity for the development of social case work. The authorities therein may pick out several children in the class taught by the practice-teacher and have her make a sociological study of them according to the methods of the psychiatric social worker; psychiatric preferably because of the need to stress mental elements or conditions in the child's home-life. In the city training school there are more children, consequently numerically more real needs for the school to know of the home environment.

Of course, the idea that teachers should meet parents and visit the homes of children is no new one. But social case study of the home background has certain training values as means of more adequately developing sympathetic attitudes towards children. Only after it had developed a good analytic technique did social service really become effective. And now to take over that technique is an obligation for teachers. There is considerable difference between going to a home every so often to pay a conventional call and going there seeking out ways and means of getting objective data better to understand the conditions underlying a child's motives and attitudes. If teaching in the future is to be really effective it must follow on such broader understandings.

The suggestion herein might well be included as part of the work in sociology, to be given, however, by some one with the social service viewpoint and training.

Making Oral English Function

EMILY V. TRUMAN, BERKELEY, CALIFORNIA.

OF all the phases of English taught in the schools, perhaps the most important, as well as the one of most recent introduction, is the Oral English. So valuable is it that it should never be omitted from the curriculum, and so vital is it that every lesson should be based upon the Oral English idea, "Every sentence must be clear, forceful and concise."

The Oral English topics should be of such variety that there need be no danger of monotony, and the pupil should be made to realize its importance most fully, for no matter what field of usefulness one expects to occupy one must first be able to "sell" himself to his employer. To do this he must be able to talk effectively; and to speak convincingly one must have the trained voice. I do not mean by this that he should be an elocutionist or an orator, but I do mean that any pupil who has reached the seventh or eighth grade of the public schools should be able to stand on his two feet and make his statements in a clear and concise manner, using language that is appropriate, and a voice whose enunciation is distinct. The training for these accomplishments, for such they be, should be given in the English period; but the teacher must be willing to take the time to awaken in the pupil the desire to talk, and to talk effectively, for in this day one must present his case, if he wishes either an interview or a position, and fortunate is the individual who learned the lesson in school, for he presents his case more clearly and fearlessly because of his practice.

There are certain things which should be taught when the work first begins. He should be instructed regarding the carriage and posture of the body; how the head should be held, and he should be taught where to place the troublesome appendages known as arms, and he should be made to realize that

the pockets of his trousers were not intended as a receptacle for his hands. He should be trained to listen to the voices of his classmates, and listen to the differences in tones with the vocal cords closed and compressed, and with them free and open. He must be made to realize that a musical voice can be acquired only by holding the head erect, so that the vocal cords may vibrate freely. Develop in children the ability to detect sweetness of tone, and awaken them to the desire to strive for it. Children should be made to understand that a vigorous effort must be used to keep the unpleasant nasal twang and the harsh notes from the voice. Girls especially should learn that "a soft, sweet voice is an excellent thing in a woman" and that nothing save constant watchfulness will acquire the habit of clear enunciation, and avoid the careless slurring, and dropping of the g, when we have the suffix "ing."

A second object in teaching Oral English is to acquire a vocabulary—to learn not only *a* word to use, but *the* word, the one word which best expresses the thought which is to be conveyed. It is necessary if one is to speak forcefully that he acquire a number of words which may be used as synonyms. There is no quicker way for one to discover his poverty of words than by attempting to speak before the class, for he very quickly realizes that he is using the same word again and again. He thus discovers his great need of tools, and then is the psychological moment to begin to teach words and their synonyms. A very profitable exercise is in having the children make a list of words and four or five synonyms, for a few weeks, and report the number they have. It has much the same effect as when men tell the number of fish they have caught, or the birds that they have "bagged." I think it even more profitable, and quite a rivalry will exist as to who will have the longest list. The result is a large number of new words added to the vocabulary, while they thought they were having a good time.

Opportunities arise frequently for impromptu talks—for example, there is to be a program in the Assembly Room, and

the class has been asked to participate. Some child should present the matter to the class, and let the children argue the question, presenting the advantages or disadvantages that would come to us from taking part. This enables them to think the matter through before reaching a decision, and permits them to decide the question on its merits.

Perhaps there is to be a "Red Cross Drive," or we may have been a little lax in getting our material ready for the school paper. Let some pupil give a talk about co-operation in school activities. Perhaps the class may desire to reach 100% in banking, and some children are not doing their part. Give the children a chance to talk and they will reach the 100% mark. They will make their talk effective, for they will not hesitate to let the indifferent classmate know that he is unpopular.

Another subject on which children love to talk and which cannot be discussed too often is "Good Citizenship." We take it up from various standpoints. Sometimes it is "Who Is a Good Citizen?" Or it may be "What Makes a Good Citizen?" Or What Does a Good Citizen Do?" Or sometimes we make it very personal: "Am I a good citizen?" Thus we make the child turn the glass upon himself and weigh himself in the class scale and see whether he is found wanting.

Sometimes we turn the searchlight on the school, and discuss questions pertaining to it. We often discuss "How May I Improve the B-School?" "What is Wrong with the B-School?" "Am I a Credit to the B-School?" "What Do I Owe the State?" —the Nation?" "What Do I Cost the State?" "Why Does the State Wish to Educate Me?" It is always noticeable after discussions of this sort that there is an awakening of interest among the children in regard to their own civic duties, and one need only to say, if a reprimand is needed, "A good citizen would not do that." I believe these discussions to be one of the best ways of raising the class not only in its standard of scholarship, but also in morale.

Another value in Oral English is the opportunity afforded to acquire a vast fund of information, for there is no end to the

amount one may learn. The doors of history, literature, biography and travel all swing open, and any one who wishes may find a full storehouse. For one who is interested in foreign countries, the contour of the land, the appearance and dress of the people, their houses and their customs furnish interesting and pleasurable information, and a "worth-while" talk.

Who would fail to enjoy traveling through Galilee at the time of Christ, or journeying with the Children of Israel through the Wilderness and reaching the Promised Land; or who would not enjoy a tour of Egypt, traversing the Nile and watching its annual overflow; or perchance take a peep into the tomb of King Tut; or who would not love to wander to

"England with her lofty towers
And hawthorne hedges white with flowers;"

to visit Westminster Abbey, and look upon the palace of the king; or who would not be happy to go to "bonnie Scotland" and visit the "Land o' the Leal"; or would you prefer to visit the Emerald Isle and see the flax waiving in the wind?

You may visit them all if you will be attentive, for we often take the journey, and spend many a happy hour there; sometimes we go with the writers of our stories in literature.

When we read "Sohrab and Rustum" we visited Persia, and learned of the rugs made there, and of their wonderful dyes; we visited Bokara, India and the region of the Aral Sea, and made the acquaintance of the family whom Sohrab never saw.

The topics, which can be found in The Book of Knowledge, Encyclopedias such as Compton's, are most numerous and interesting, and will teach pupils to read and hunt for material in the better class of magazines such as the "Outlook," the "Independent" and the "Literary Digest," which furnish wonderful opportunity for gaining information and breadth of vision on the world's events. Children may be led to use these sources of information if one insists that "current events" must really tell what is occurring, and that this knowledge must be something of interest.

One must quickly quell all tendency to give reports of murders, "hold-ups" and hunger strikes, and to encourage meritorious reports which give the newer advances in science and invention, making the youngster realize that he must be alert if he wishes to keep abreast of the times.

Young people in their 'teens, read magazines only when compelled to do so, and it behooves the teacher of English to find some motive which will make the reading of current literature a necessity, and thus aid in the formation of a useful as well as a character-building habit.

Learning of orations furnishes a splendid opportunity for improving the speaking voice, and correlating history with English, as well as getting the youth of today acquainted with the great voices of the past, as well as with the masters of the present. He can transport himself to the times of our Revolutionary Fathers, and realize for himself the causes which led to the forming of the new nation. The child will unwittingly adopt the phrases and vocabulary of those masters and the study of the oration should eventually develop in one the ability to make convincing arguments; for opportunities open in the study of history for pupils to debate questions of right and wrong, and to back up their arguments by historical information. Such questions as, Was the Stamp Act right? Had Great Britain a right to tax the Colonies? Which did more for the cause of the Colonies, Franklin or Washington? Whose policy do you consider the wiser, Hamilton's or Jefferson's? Was John Brown a hero? These and countless other topics lead children to think and talk, and study the characters of men in order to find material to substantiate their arguments. In this way the English and the history are closely correlated and a greater interest is aroused than could possibly be, if the subject were taught by the "text-book" method.

Let the pupils assume the role of Burke and Pitt, and taking their thoughts and ideas make speeches in Parliament in favor of the Colonies. Thus they will realize that all English people were not in favor of Great Britain's acts, and they will get the

atmosphere of those far-off times. Let another group enact a meeting of the Continental Congress, and be for the occasion Patrick Henry, James Otis, and Samuel Adams and other patriots. Let each write and deliver an address against the insurmountable tyranny of Taxation. In this way he may be led to understand the feeling of rebellion which inspired our forefathers, and finally caused them to withdraw their allegiance from the Mother Country.

Not the least important part of the Oral English work is the dramatics, which has for its purpose not the making of actors nor actresses, but instead wishes only to develop in children poise and stage-presence; to enable the pupil to enjoy good acting when he sees it, and also to participate if he so desires. It affords a means of entertainment, and enables a person to enter into the spirit of the person he portrays; thus it becomes necessary that we carefully select the parts which children play. The characters should be those whom they should desire to emulate.

It is often said that the ones who have taken the part of Christ in the Passion Play have become Christ-like in character; while those who have portrayed Judas have in turn become treacherous and deceitful. Since human beings, like worms, become like those things upon which they feed, how very important it is that our mental food be of a very high grade.

Children from childhood live in the land of imagination; as soon as they begin to play it is a constant game of "Let's pretend." A stick or father's foot is quickly transformed into a runaway horse. Anybody on all-fours becomes a dangerous bear or a lion, from which the youngster runs shrieking. Why not carry it into the schoolroom and continue "Let's pretend" through school life. This develops the imagination as nothing else will do.

As children study their stories in literature and history, "Let's pretend." Let's pretend that we are Columbus and let us study and learn his story, then let us write it out after

we have studied it carefully, and let's see who's the best Columbus, and King John, and the Fathers, and Queen Isabella and Little Diego. After we have selected our characters, let's try it out before another class, and see if we do not know more of Columbus, and find him more interesting than we supposed. "Let's pretend" we came over to Virginia, and we will meet and plan our voyage; we will get reports from those who have touched our shores and learn from them of the great riches. Let's talk over the coming, and then we will act it out, again and again; and in this way we will better get the spirit which prompted the "gentlemen" to leave England and cross the stormy seas. We will watch them embark, and set sail, and we will listen to their conversation on board the vessel, thus getting the spirit of the times. When we have them safely landed on the shores of Virginia and have them meet with the "red-men," and heard their plans, then we'll write it up and play it. Everyone must take part. Everyone must be interested.

I need not go into the details as to what history furnishes: a few suggestions will suffice. Let the thirteen colonies each write or tell why he came. Dramatize the "Writing of the Declaration"; the meeting of the small boys and General Gage; the First Continental Congress; the story of Lincoln are a few of the possibilities. Your own interest in history will suggest many others equally good or better.

In literature almost anything that one may read may be dramatized, from "Mother Goose Rhymes" to the wonders of Shakespeare. In the Junior High Schools, "Horatius," "Sohrab and Rustum," "Snowbound," "The Man Without a Country" can all be dramatized to advantage. Let the class produce their own version, and later present one written by more experienced dramatists, but be sure to let them write their own first, for while their own will be very imperfect, they will derive incomparably more value than if they used only the well-written one. The effort made gives the excuse for the production; and we must learn to do this sort of thing and the earlier we begin the better.

This year in classes we wrote from "Lamb's Tales from Shakespeare," dramatized versions of "The Tempest," "Macbeth," "Othello," "The Taming of the Shrew" and "Hamlet." We also dramatized "The Revolt of Mother," "Wee Willie Winkee," the story of "Ali Cogia" and a number of other short stories.

This work furnished a basis for our composition work, as well as made necessary a thorough and careful study of the lesson; it also insured more reading of substantial material than many of the pupils would have done.

There is to my mind no one phase of Oral English which calls into play so many of our mental faculties. The imagination, the judgment, the memory and the reasoning all are needed, as well as the will to carry it through to a conclusion.

It also aids in many other departments, for the physical education, the domestic science, the art and the music are all needed; and it is the wise teacher who insists that the children plan it all. They should plan their own costumes and make them with the aid of their teacher; plan their own music and learn it with the aid of the music teacher, and the posters should come from them supervised by the teacher of drawing. Whatever is needed in the way of stage setting should be done by the boys in their manual arts classes. In this way they learn not only dramatics but how to develop the play as well.

The last phase of Oral English work is that of Story-Telling. Children love to tell stories; they will willingly give you a garbled account of a book read, but it is of no particular value to any one. What a child really needs to know is how to tell a short story interestingly—as it is written; in the words of the author.

Let a child tell graphically in the Biblical language the story of Moses, or Ruth, or the Children of Israel, or of the Miracles of Christ, and his audience will listen with spellbound interest. Let them tell some of the chapters of "Sonny," or "The Tar Baby," or "The Brush-Wood Boy," or "Huckleberry

Finn," or "Tom Sawyer," or if you desire something of a more learned nature, children will listen spell-bound to Dr. Jordan's "Story of a Salmon."

At first it seems hard, but let some good story-teller tell from Mrs. Wiggs the story of the Wiggs family going to the theater, or the Ruggles family going to dinner, or the story of the "Selfish Giant," and every child in the class endeavors to emulate that one; and good interesting stories are the result.

The main thing is to have a standard established, and the teacher must not set it. If she tells the first story, they at once decide that they can't do it that well; but they are not willing to be outdone by their classmates.

Reflections

Evening shadows lengthen, deepen,
As the sunset fades away.
Lost from sight the curving shore-line
Where the stately pines hold sway.

Mirrored tints of rainbow glory
Vanish, and the stars appear;
Gleaming Hesperus—Queen of Evening,
Leads the hosts throughout the year.

In my light canoe I'm gliding
'Mongst the planets and the stars,
Mighty Jupiter and Saturn,
Then across to friendly Mars.

Now the paddle's dipping, dripping,
All along the Milky-way;
And I yield to the enchantment
Of reflections on the bay.

EDITH M. SHANK,
Chicago, Ill.

The Measurement Movement—and the Man in the Street

CHARLES G. REIGNER, BALTIMORE, MD.

THE cause of scientific measurement in education has probably suffered more from the ill-advised efforts of its enthusiasts to popularize the "idea" than it has from the most determined opposition of its detractors.

It was Lincoln, we believe, who said that God must have loved the common people because he made so many of them. The common sense of the common man—in education as in any other field—can ordinarily be trusted to approximate the ancient Greek ideal of the "happy mean." In the matter of educational measurement, the judgment of experienced school men and women who are in daily first-hand contact with boys and girls is more to be relied upon than that of the wild-eyed enthusiast or the unreasoning—and ofttimes prejudiced—critic. It seems worth while, therefore, to attempt to set out some common-sense conclusions of one in the educational street, who is furthermore in continuous contact with classroom teachers in widely separated communities.

Our concern here is with tests of "general intelligence." Standardized tests to *measure achievement* in specific school subjects commend themselves to every thoughtful teacher. The very objectivity of those tests is an argument for their validity. Most of us have come to realize that many of our judgments of student performances are *subjective* and colored by all sorts of circumstances. An objective test is impersoanl. We welcome the opportunities which standardized tests afford us to compare the achievements of our own pupils with the actual achievements of other pupils in other communities. We are also learning something about the value of standardized

tests in locating and diagnosing specific difficulties in the learning process.

The general intelligence tests, however, represent a horse of a different color. To begin with, if any one has yet furnished us with a thoroughly satisfactory definition of "intelligence," we are not aware of it. Theoretically it seems reasonable to suppose that native intelligence determines one's ability to learn—not only in the course of formal school instruction but from all the varied experiences of life. We are told by our good friends, the experimental psychologists, that their studies *tend* to show that intelligence—"raw" intelligence—is fixed before birth and hence not improvable in life. To many of us in the street, however, the evidence presented to support this theory is entirely unconvincing and quite insufficient to entitle any one to dogmatize on the subject. It may well be that some day the theory of the unimprovability of intelligence will go into the discard as has the "faculty psychology" of our educational forebears.

The Great War gave intelligence testing a tremendous impetus. All of us who are even moderately familiar with the history of testing realize that all the latter-day tests are debtors both in method and material to the work carried on in connection with the army mental tests. We have it on the authority of the distinguished chairman of the Psychology Committee of the National Research Council, Dr. Robert M. Yerkes, that "the contributions to methods of practical mental measurement made by this committee of the National Research Council, and by the psychological personnel of the army, are profoundly influencing not only psychologists, but educators, masters of industry, and the experts in diverse professions." Most of us are inclined to exaggerate the importance to the world of the work in which we are directly engaged. Without committing *lese majeste*, the man in the street might suggest that something of that well-known tendency of human nature has found expression in this pronouncement.

Many of us have now had several years' experience in giv-

ing and scoring intelligence tests. Their chief value for school purposes, we are told, is in *classifying pupils* on the assumption that unsatisfactory school work is due, in the last analysis, to "low native intelligence." A recent writer* says: "Whenever retardation is general, and whenever there is relative unimprovability (apparently the writer has in mind cases of children who are making little or no progress in their school work), it is well to test for intelligence." It is perfectly clear to the man in the street that it is in the interest of economy to segregate children of "low native intelligence" into special classes; and, on the other hand, society—and a democratic republic in particular—will be vastly benefited if it is possible to segregate its supernormally "intelligent" children and give them training which will enable them to translate their superior "intelligence" into terms of leadership.

It's a seductive theory. Utopias have always exercised a fatal fascination over the minds of men. Counsels of perfection are available in every phase of human endeavor. They have a certain value because they express for the man in the street his inarticulate longing for a world in which absolutely just and equitable treatment will be meted out to every member of the human family. The classroom teacher studies this beautiful theory of classifying children on the basis of intelligence tests and says: "That is all very well and good *if it can be done.*" Remember, the theory of the unimprovability of intelligence has not been verified. As long as there remains a query on that point, your true scientist will be cautious in recommending the measures that the results of intelligence testing may seem to justify. Apart from this general fundamental "exception" that we shall take, two leading questions suggest themselves: (1) Are the tests valid—do they actually measure intelligence? (2) May not other qualities have a *positive* effect in offsetting—to an extent which we can hardly hope to measure—the handicap of alleged "low native intelligence"?

* McCall, W. A.: How to Measure in Education, 1922.

These are questions, which, it seems to us, get right down to the bed-rock of the matter.

As one reads over the current intelligence tests, one wonders whether after all they are not calculated to reveal *the relative richness or poverty of the information and of the life contacts and experiences of the subject* rather than his native mental capacity. Many parts of all the tests seem, to a fair-minded and thoughtful teacher, to imply the possession of specialized experience which it is inconceivable that every one everywhere has had. Failure on the part of an individual, who happens not to have had that bit of specialized experience, to answer those particular questions will, of course, reduce his score—his I. Q. will drop a few points.

One other point—which is certainly not made flippantly. All of us—even those who have had but limited experience in giving tests to school children—recognize that the matter of their administration deserves more thought than it is usually accorded. We know also that the child's subjective state at the time he takes the test has much to do with determining the score he makes. When there is even a limited interference in this direction, the scores are invalidated to that extent. We are not aware that any one has yet attempted to set up tests to measure subjective states of feeling and emotion and the extent of their influence on the children who are being tested.

But granted that in spite of these disturbing questions which naturally come to the mind of the teacher while she is holding the stop-watch on the test, it is possible to determine even roughly a child's general intelligence, do qualities of industry and perseverance and general stick-to-it-iveness count for nothing? May not an individual whose intelligence is confessedly limited both by heredity and environment overcome that handicap by hard, unceasing, day-after-day work? Isn't it possible that in the race of life there is something that corresponds to the fable of the hare and the tortoise?

Mr. Intelligence Tester, you haven't yet proved your case to

the man in the street. We are open-minded, our sympathies are with you, and we realize probably better than you do the far-reaching practical value of the results you are seeking to achieve. But as long as the more cautious among you are not committed to the theory of the unimprovability of intelligence —on which your whole case rests—and as long as there are these *ifs* and *ands* and *buts* in our minds you must excuse us from taking the quite revolutionary steps which are urged upon us.

It seems to many of us, therefore, that the most that can be said at present for tests of general intelligence by cautious men and women who value their intellectual integrity is that they have some diagnostic value in determining the relative richness or poverty of assimilated information and experience. We are very glad to find a more wholesome note in the late literature on the subject. We are, for example, exhorted not to attempt the classification of pupils on the basis of the results of intelligence tests alone. That is good. Perhaps after a while our professional testers will be more respectful to that conception of the teacher's function which is associated with Mark Hopkins at one end of the log and a student on the other. Teaching is essentially an art—the play of human personality upon other human personalities. It is an art, to be sure, based on science. We are interested in the *science of education* so that we may practice the *art of teaching* with more satisfaction to ourselves and with more far-reaching and enduring results in the lives and thought processes of boys and girls.

The Problem Method

BERGOTH SANDS, SARANAC LAKE, N. Y.

ONE OF the most satisfactory methods in modern teaching is the Problem Method. Quite often this is confused with the Project Method, but the difference is very distinct.

In the second, a subject of more comprehensive scope is chosen, such as "Silk" or "Lumber." All the subjects of the ordinary school curriculum may be pressed into service in the teaching thereof. For example, problems of the silk industry in Arithmetic, supplementary reading on the History of Silk or the Silk Industry in Europe for Reading, map and graph study of silk-producing countries for Geography, and oral or written compositions on Visiting a Silk Mill, for English. In undertaking a Project, the Problem Method is used, often unconsciously by the teacher. It simply means that she centers the whole lesson around one essential fact, converting that fact into a broad problem.

The sooner the teacher thoroughly grasps the numerous ways in which the Problem Method may be used, the sooner will she be fitted to undertake various projects, for the former is a stepping stone to the latter. It is used to reach the "core" of the lesson in an easier, more practical way. Teachers have done this for a long time in Arithmetic. How much progress would our children have made if we had simply asked them to study the theory, instead of solving problems from the first grade up?

Yet this is what we have been doing in Geography and History particularly. We have assigned certain pages for study. Then the pupils recited them, parrot-fashion, in class. The brighter ones grasped the meaning in one third of the time allotted, and then waited for the "Slow Johnnies." The latter

recited without understanding. The simple proof of this is to question the child on the text. Often you will find that although his recitation was perfect, it had no meaning for him.

In the Problem Method this is avoided. Although it may be used in any of the grades, it is especially suited to the upper. Supposing you are to teach New York City to a fifth grade. In the class period before the children have studied, you explain that the lesson is on New York. You ask what they already know about the city. Invariably its size is mentioned. Then you ask what they would like to know about it and very soon you will get the answer, "Why has New York City grown so large?" This then is the problem and you write it plainly on the board. The brighter pupils are eager to answer it without studying but the wise teacher merely tells them that the answer to the problem is in the text book. She adds that it can be answered more fully if they will read the supplementary geographies on the reading table, *but* they must read the text book first. The children rush to their seats, eager to begin the lesson. Even the dullest, least interested pupil wonders if he can find the answer, and a triumphant smile appears on his usually discontented face when he does so. The lesson has more of a definite purpose, an incentive, than it had when he was merely ordered to study New York!

The next day in the recitation period the pupils will suggest the topics dealing with the problem. With the aid of the teacher they make an outline of it. The wise teacher will now give the more backward pupils who rarely did any voluntary reciting before, the opportunity to suggest the most obvious topics, derived from the text books, thus giving them great encouragement. The brighter pupils, capable of much more extensive reading in the limited period allowed, have sought out interesting minor details which they are delighted to recite in class. The more important points are placed under the topics. When the outline is completed, the children copy it into their notebooks and keep it for future reference. They

enjoy even the copying, for it is a thing of vital interest to them; they have all taken part in the making thereof.

Although I contend that this method is more necessary and satisfactory in teaching geography, it may well be used in any ordinary subject. In Reading, if the subject should be Warner's "Hunting of the Deer," the following problem may be placed on the board, "Why could not the doe return to her fawn?" In Penmanship it may be, "What are the difficulties to remember in making the letter M?" In Physiology it may be, "Why is the blood of the arteries red and that of the veins blue?" To the ingenious teacher hundreds of problems will suggest themselves daily and she must learn to discriminate between the worth-while and the time-wasters.

To sum up let us consider the advantages of the Problem Method.

1. It eliminates the question of discipline.
2. It reaches the "core" of the lesson.
3. It demands thorough preparation on part of both teacher and pupil.
4. Little "bluffing" is possible.
5. It arouses keen interest.
6. It encourages thought.
7. It leads to more extensive reading and study.
8. It stimulates verbal expression.
9. It gives the "Slow Johnnies" a chance.
10. It prevents the teacher from falling into a rut.

These are the most essential, but the beneficial possibilities of this method are unlimited. Even for these advantages it surely is worth trying.

American Notes—Editorial

Teaching success, and consequent scholarly attainments by the pupils, depend largely upon the personality of the teacher. Personality can be cultivated. It is not necessarily inherited; or, if so, it can be and usually is, greatly modified by a variety of outward and inward conditions and habits. We are sometimes inclined to believe that there should be a "Professorship of Personality" in every Normal School and College in the land. The incumbent would have a vast field of usefulness. He would study the physical, mental and spiritual endowments, tendencies and conditions of human beings in general and of his pupils in particular. There is no doubt but that he could eliminate many common faults and erroneous notions from the minds of those under his care,—who would otherwise go out to teach and who would have to have these faults *knocked* out of them in the hard and costly school of experience,—if, indeed, they ever did get rid of them.

Unquestionably, we have all had numerous opportunities to experience or to observe the usefulness and value of a well-balanced, tactful personality in the teacher. Unfortunately, however, many of us have suffered the consequences of the absence of these qualities in some of those who have essayed to teach us or our dependents. The question is thus raised as to what is personality and how can it be attained?

The derivation of the word *personality* will give us at least a "lead" in the search for an answer.

The Latin *"per"* (through) and *"sonus"* (sound) were united to form the word "persona" which meant "a mask for actors." The Actor, behind the mask was "an individual and rational being; a being possessed of self-consciousness, recognitive memory, powers of rational inference, and with ethical and esthetic feelings, conceptions and ideals as distinguished not only from inorganic but also from the merely organic and animal existences." (Standard Dictionary.) The Actor, a mind and spirit, spoke through the mask,—a material ***thing.***

The personality of the teacher is his real, spiritual and intellectual self, apart from the organic, material, animal body in which his Spirit lives, and through which (as through a mask) he speaks and acts. He can cultivate personality almost indefinitely. He can make it a mighty force in the uplift of humanity. In the profession of teaching he must guard against too much speaking. Telling is not teaching. Many teachers, with more zeal than discretion, greatly overdo expression and explanation. A few kindly words that direct

the work which the pupil must do for himself, if it is to be made clear to him and become his own possession, are far more effective than an exhibit of the teacher's knowledge of the subject. A winning personality is the *sine qua non* of the teacher. He must attain it, or fall short of the highest ideal of the profession.

We have rarely seen as full and adequate a statement of what school and college offers to the student as that which we reproduce from The Journal of the National Education Association, and originally made, as we understand, by R. W. Getchell, Iowa State Teachers' College, Cedar Falls, Iowa:

College buildings are the workshops, books and laboratories the tools, and the students the materials in the Nation's greatest industry—building lives through education. The formal examination helps to correlate the term's work; it helps to indicate fundamentals; it helps in placing subjects according to their relative importance; and it helps in crystallizing hazy comprehensions.

But knowledge is not education; expertness is not education; experience is not education; neither are high grades alone a measure of your educational attainments. Pencil or ink cannot write from your hand a record, for man to read, of the success of college training in your life.

English, chemistry, cookery, languages, sewing, athletics, economics, recreation,—all will lose their identity and blend into a life; lose their identity and become your stock in trade, your assets, your capital.

Think seriously! Are you becoming truly educated? Are science, art, religion, ethics, molding you into the genuine college-bred man or woman? Let us inquire. Herein lies today's examination,—an introspective sort, a serious sort.

HERE ARE THE PROOFS.

You are not too proud to be seen in old clothes, doing honest, though menial, work.

You respect age, be it clothed in silk or cotton.

You find no pleasure in the discomfort of others.

You speak only good of other people.

You stand for your principles, even though friends oppose.

You never shut common folks away from you by a wall of false dignity, of envy, of slander, or of priggishness.

You always keep your promises, be it an engagement, an errand, or a duty to be performed.

You find the greatest pleasure in the highest types of literature, art, music and entertainment, be it the drama, the club or the movie.

You seek as friends those who bring out the best there is in you,

and you in turn appeal only to the highest motives in your associates.

You are self-reliant in difficulties; you shoulder responsibilities willingly; you can create the means necessary to attain a difficult end; you are willing to accept and able to discharge the duties of leadership in club, school, community, county or state.

You are patient in the schoolroom, impartial, thorough, sociable, willing to spend and be spent.

You are sought as a confidant by friends, as a leader by the crowd, as an arbiter by disputants, as an associate by the learned, as the soul of honor by the suspicious, as a playmate by children, as a companion by the timid, as an informant by the ignorant, as an optimist by the depressed, as a friend by all your acquaintances.

WHAT THE SCHOOL OFFERS.

Within you, not within your diploma, will rest the impress of this institution, its ideals, its courses, its faculty.

The school seeks to offer you:

A little knowledge. A desire for more. A trained mind, a trained hand, a strong body. High ideals—moral, intellectual, spiritual. A persistence that laughs at difficulties. The stuff out of which is built the symmetrically developed man or woman.

Will you accept? Are you accepting?

Are your children fretful and nervous, or cheerful and energetic? Are they resistant to disease, or do they "catch everything that comes along"? Are they gaining in weight each month? What do you know about the lighting, heating and sanitation of your school building? These and many other pertinent questions are discussed in the Child Health Program for Parent-Teacher Associations and Women's Clubs just issued in bulletin form by the Department of the Interior through the Bureau of Education.

All women are potential mothers, the authors of the bulletin declare, and to all women they fling the challenge: "What are you doing to bring health, strength and joy to every child in your community?"

If children are to grow and thrive, the essentials for health and growth must be provided, and parents and children must be taught how to make use of these essentials. Close co-operation is urged between parents and teachers in forming health habits in children and in furnishing the proper nutrition at home and for the school lunch. Adequate recreation for teachers and pupils, health campaigns and methods of awakening public opinion and interesting public officials are discussed.

A bibliography of useful reference books on the subject is included in the bulletin.

Book Reviews

We acknowledge the receipt of the following books for review:

From THE AMERICAN BOOK COMPANY.

LEADING FACTS FOR NEW AMERICANS. Ralph Philip Boas and Louise Schutz Boas. Admirable for the purpose of "Americanization" classes.

MODERN WORD STUDIES. J. N. Hunt. Aids in pronunciation, spelling, analysis.

CIVIC SCIENCE IN HOME AND COMMUNITY. George W. Hunter, Ph.D., and Walter G. Whitman, A.M. Fully illustrated, comprehensive, practical.

ESSENTIALS OF ECONOMICS. Fred Rogers Fairchild, Ph.D. Illustrated. An important subject for everyone in America, where there is so much money being spent unintelligently.

From GINN AND COMPANY.

ESSENTIALS OF PLANE GEOMETRY. David Eugene Smith. Admirable in compact comprehensiveness.

ESSENTIALS OF PLANE AND SOLID GEOMETRY. Same Author and Publishers. The two books contain essentials for college entrance geometry.

OTHER PUBLISHERS.

THE FUNDAMENTALS OF MUSIC. Karl W. Gehrkens. An admirable first year study course in music understanding. Adopted by The National Federation of Music Clubs. Essential to students of music; will make any person a more intelligent and discriminating listener. Published by The Oliver Ditson Company, Boston, New York, Chicago.

THE OXFORD GEOGRAPHIES. THE THAMES BASIN. An Elementary Geography. Marie Michaelis, M.A., Edited by O. J. R. Howarth, M.A. Oxford University Press. Suggests and develops a new method of approach to the subject. The Oxford University Press, New York City.

LA TOURAINE. Edited by A. Wilson-Green, M.A. Oxford University Press.

LOUIS PASTEUR. Illustrated. S. J. Holmes, Ph.D. Harcourt, Brace and Company.

IMPORTANT ERRATUM.

In reviewing "Longmans' Historical Pictures," published by Longmans, Green & Company, 55 Fifth Avenue, New York City,—in our February number of EDUCATION,—we inadvertently gave the price, viz., 50 cents, as applying to the large set,—24 by 18 inches, in color and on plate paper 30 by 25 inches. This was altogether out of reason, and we humbly apologize to the publishers and our readers. These splendid pictures are sold at $14.00 for the set. There is a small set, 6 by 9 inches, for 50 cents; and either set gives the purchaser something thoroughly worth while, for his money.

THE COMING OF MAN. John M. Tyler. Marshall Jones Company, publishers. A book that staggers the imagination in its study of the origin and development of life on the earth and the evolution of man.

HOW TO TEACH READING. Mary E. Pennell and Alice M. Cusack. Houghton, Mifflin Company. A lucid exposition of an all-important subject.

SHAKESPEARE'S JULIUS CAESAR. Edited by Milton M. Smith. One of the Charles E. Merrill Company's admirable English Texts series.

EDUCATION MOVES AHEAD. Eugene Randolph Smith, M.A. Introduction by President Eliot. A survey of progressive methods. One of the admirable series of educational books from The Atlantic Monthly Press.

THE ROAD AWAY FROM REVOLUTION. Woodrow Wilson. The Atlantic Monthly Press.

OF WHAT USE ARE COMMON PEOPLE. By Heinrich E. Buchholz. Warwick & York.

INTELLIGENCE TESTING. Rudolf Pintner, Ph.D. Henry Holt and Company. It treats of the rise and growth of the movement and summarizes results.

ELEMENTARY SOCIOLOGY. Ross L. Finney, Ph.D. Benjamin Sanborn & Co.

WE AND OUR HISTORY. By Albert Bushnell Hart. A biography of the American People, with nearly 800 illustrations. The American Viewpoint Society, publishers, New York.

From Charles Scribner's Sons we have received a fine text book for students, teachers and parents who want to get the principles of psychology for use in the classroom and in the home. It is entitled EVERYDAY

PSYCHOLOGY FOR TEACHERS, and is written by Frederick Elmer Bolton, Dean of the School of Education, University of Washington. The readers of EDUCATION are familiar with this name and will be interested in this book, which presents the development of this fundamental subject underlying all successful training of the young in both home and school. The book is written with a clearness of thought and lucidity of style that will make it available to all fairly educated readers; and it should be carefully studied by those who are ambitious to succeed in the profession of teaching, whether they are still studying for that work or already actually engaged in it.

THE COLLEGE BLUE BOOK. Three Volumes. By Huber William Hurt, Ph.D. Published by The College Blue Book Company, Chicago, Ill.

At present we have Vol. 1, 1923, giving Colleges of Liberal Arts and Sciences. There will follow in 1924, Vol. II, Professional and Technical Education; and in 1925, Vol. III, Music and the Fine Arts.

We cannot speak too strongly in regard to these books,—from the standpoint of the institutions whose statistics are reported, from that of the student who may wish to select intelligently the college he will attend, or that of the statistician, the merchant, the philanthropist, the superintendent of schools, the high or other schools, boards of trustees, parents of prospective college students, state or church boards of education, or the mercantile world having goods to sell to institutions such as these. The entire United States is covered, and there are educational maps of all the states, tables of standards, high school statistics, etc., and a complete index. An enormous work is this. It will be of unmeasured value to the educational world.

SHORT STORY WRITING—AN ART OR A TRADE? By N. Bryllion Fagin, Instructor in Short Story Writing, University of Maryland, Thomas Seltzer, N. Y. Price $1.50.

Those who feel tempted to read Professor Fagin's book (and it can be done in an hour) will find it mentally stimulating, spiritually refreshing and pedagogically suggestive. It is splendid because: (1) It is courageous; it says the things we felt but dared not say. (2) It is well-balanced and carefully considered. (3) It is succinct. The author has gotten right at the heart of fundamentals and omits the persiflage that often adds many pages to the textbook. (4) It is written by one who is himself a successful college instructor of short story writing. (5) It has excellent foot-notes and references to the better class of short stories such as those by W. D. Howells and Kipling. This feature makes it a kind of literary map of the story. (6) It upholds the older and finer traditions of literary art that prevailed before the present era of commercialization set in. It shows how literature has been degraded into a trade. The author rightly criticizes adversely the poor quality of story that floods the pages of our popular magazines and finds fault with the standards of "writing to please the editor." Instead of trying to copy O. Henry, he advises literary aspirants to study life itself, which was the method of O. Henry himself, and to write about those phases of life with which they are familiar. Not a copy of a copy, but representation of the vital problems of the individual and of society should be their aim.

—Review by Henry Flury, Eastern High School, Washington, D. C.